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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/934,975	08/21/2001	Guy Cote	CISCP256/4087	8279

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EXAMINER

CZEKAJ, DAVID J

ART UNIT	PAPER NUMBER
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2621

DATE MAILED: 06/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/934,975	Applicant(s) COTE ET AL.	
	Examiner Dave Czekaj	Art Unit 2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 13-18 and 22 is/are rejected.
- 7) ☒ Claim(s) 10-12, 19-21 and 23-25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-25 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 18 is rejected under 35 U.S.C. 101 because the claim does not meet the 35 U.S.C. 101 requirements (the claims have improper language regarding the computer readable medium and computer system). Please see the USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" in the Official Gazette notice of 22 November 2005.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-9, 13-18, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishiyama (2001/0008544) in view of Liu et al. (6904094), (hereinafter referred to as "Liu").

Regarding claim 1, Ishiyama discloses an apparatus that performs rate control taking both the picture quality and time delay into account (Ishiyama: paragraph 0001). This apparatus comprises "a frame buffer" (Ishiyama: figure 3, items 26 and 37), "an encoder receiving input from the buffer" (Ishiyama: figure 3, item 2), "a vbv buffer receiving input from encoder" (Ishiyama: figure 3, wherein the vbv buffer consists of the input and output buffers), "a channel interface receiving input from vbv buffer" (Ishiyama: figure 3, wherein the channel interface is the input and output buffer monitors), "a channel rate control connected to the vbv buffer and channel interface" (Ishiyama: figure 3, wherein the channel rate control is the reception and sending channel monitor), and "a transcoder rate control connected to the frame buffer, encoder, vbv buffer, and channel rate control, configured to monitor the fullness of the vbv buffer" (Ishiyama: figure 3, item 3, paragraph 0091, wherein the monitoring is done by the input buffer monitor). Ishiyama further discloses "calculating a current value of the number of bits in the video buffer and if the current value is less than a threshold, decreasing the rate reduction and if the current value is greater than an upper threshold, increasing the rate reduction" (Ishiyama: paragraphs 0094 and 0095, wherein the underflow and overflow indicate that data has gone above/below a threshold value, increase/decreasing the rate reduction is diminishing/increasing the code volume in the buffers for the plurality of frames). Although Ishiyama shows the channel interface and channel rate control contained within the transcoder rate control, it would have been obvious to split

the units apart into their individual components (Official Notice). Doing so would have been obvious in order to make the apparatus more versatile by making the apparatus partially work if one of the individual components failed. However, Ishiyama fails to disclose the transcoder rate control configured to monitor data in the frame buffer). Liu teaches that there is a need for a processing system which minimizes transcoding artifacts (Liu: column 1, lines 32-35). To help alleviate this need, Liu discloses "a transcoder rate control configure to monitor video data in the frame buffer" (Liu: column 6, lines 60-67, column 7, lines 24-34, wherein the frame buffer is the smoothing or TPE buffer, which is monitored to determine overflow conditions). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to take the apparatus disclosed by Ishiyama and add the buffer monitoring taught by Liu in order to obtain an apparatus that obtains the best possible video quality by eliminating transcoder artifacts.

Regarding claim 2, Ishiyama discloses "a decoder to provide input to the frame buffer" (Ishiyama: figure 3, item 1).

Regarding claim 3, Ishiyama discloses "the channel rate control monitors the fullness of the vbv buffer and controls the output of the buffer to meet a target bit rate in transmitting data to the channel interface" (Ishiyama: paragraphs 0135, 0141-0142 and 0145-0146, wherein the channel rate control is the reception and sending channel monitor, controlling the output of the buffer is

done through the use of the quantization controller which increases or decreases the code volume to prevent overflow and underflow).

Regarding claim 4, Ishiyama discloses "the transcoder rate control monitors the contents of the frame and vbv buffer to ensure the vbv buffer does not underflow or overflow, the transcoder rate control using the results of the monitoring to control the rate at which frames are extracted from the buffer" (Ishiyama: paragraphs 0141-0142 and 0145-0146, wherein monitoring the buffers is done through the use of the quantization controller which increases or decreases the code volume (the rate at which frames are extracted) to prevent overflow and underflow).

Regarding claim 5, Ishiyama discloses "the transcoder rate control utilizes rate reduction means to achieve a target bit rate, the target bit rate being the rate at which data is provided from the vbv buffer to the channel interface" (Ishiyama: paragraphs 0101 and 0103, wherein the rate reduction means is the ratio R , the target bit rate is the maximum throughput of the channel).

Regarding claims 6 and 15, Ishiyama discloses "the transcoder rate control further comprises requantization means which selectively requantizes the transform coefficients based upon image degradation" (Ishiyama: paragraph 0145, wherein the requantization means is the quantization set controller).

Regarding claim 7, Ishiyama discloses "the transcoder rate control modifies the quantizer scale of the macroblocks in frames transmitted from the

vbv buffer to the channel interface” (Ishiyama: paragraphs 0145-0146, wherein the modification is the increase or decrease in code volume).

Regarding claims 8 and 17, Ishiyama discloses “the transcoder rate control inserts a vbv delay value for frames transmitted by the channel interface” (Ishiyama: paragraph 0146, wherein the delay is the increase in the volume of codes which would delay the frames being transmitted).

Regarding claims 9, 16, 18, and 22, note the examiners rejection for claim 1, and in addition, Ishiyama discloses “computing a rate reduction factor” (Ishiyama: paragraphs 0101 and 0103, wherein the rate reduction factor is the ratio R), “computing a quantizer scale, wherein the rate reduction factor and the quantizer scale are computed using vbv buffer and frame buffer information” (Ishiyama: paragraph 0145, wherein the quantization set controller produces the quantizer scale, the vbv buffer and frame buffer provide the image data), “applying the results to an encoder” (Ishiyama: figure 3, item 2), and “repeating the steps for a plurality of frames” (Ishiyama: paragraph 0164, wherein the repeating is done on the next processing).

Regarding claim 13, note the examiners rejection for claims 1 and 9.

Regarding claim 14, note the examiners rejection for claims 3 and 5.

Allowable Subject Matter

5. Claims 10-12, 19-21, and 23-25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Regarding claims 10-12,

19-21, and 23-25, Ishiyama in view of Liu fail to disclose the specifics for computing the rate reduction factor. A further search was conducted which failed to yield any prior art. Therefore, the prior art fails to teach or render obvious these limitations taken within the others in the claim.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dave Czekaj whose telephone number is (571) 272-7327. The examiner can normally be reached on Monday - Friday 9 hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on (571) 272-7418. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DJC

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TC 2600